

TST – Total Station Training

Session 1-3a Initial Configuration

Initial Instrument Configuration

The Nikon NPL 352 total station needs to be configured prior to being used for measuring and the recording of data.

Some settings are set once at the beginning of a job and cannot be changed. These items are referred to as Job Settings. They are set from within the **MENU** screen, under the **SETTINGS** heading.

Items such as prism constants, temperature and pressure can be changed as equipment and conditions change. These are referred to as Variable Settings. These are set from within the **HOT**, **MSR1** and **MSR2** screens.

All settings should be checked prior to establishing a new job to prevent errors. Variable settings should be checked occasionally during use to verify that they have not been reset inadvertently.

When establishing the initial instrument settings, the angle compensators of the instrument should be turned off, as it will probably be sitting on a desk, subject to vibration and movement. To turn the compensators off (and later back on); use the following steps:

1. Power on the instrument with the **PWR** button.
2. Tilt the telescope when prompted.
3. Press the level vial key (0 numeral).
4. Press the up or down arrows until the out-of-level values are replaced by the words OFF in both directions.

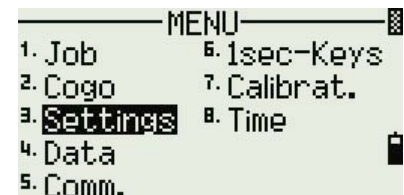
Turning off the compensators during field use may be useful on sites where there is excessive vibration. Excessive vibration interferes with the functioning of the angle compensators, complicating the measuring process.

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Job Settings (accessed through the MENU screen)

As noted above, some settings are set once at the beginning of a job and cannot be changed while in that job. If it is desired to use different Job Settings, a new job must be created. The Nikon NPL-352 total station **SETTINGS** function is accessed by;

1. Pressing the **Menu** key
2. Selecting **3: Settings** by pressing the **3** key.

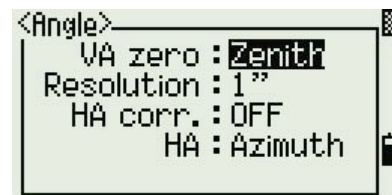


These initial mode settings are extremely important as they determine the type of data being measured, any corrections being applied and communications to external storage devices.

The suggested settings for US&R use are given in the text below. The images that accompany the text are samples only and may vary from the settings described in the text.

1. Angle

VA Zero:	Zenith
Resolution:	1"
HA Corr:	ON
HA:	Azimuth



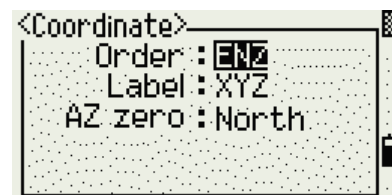
2. Distance

Scale:	1.0000
T-P Corr:	ON
Sea Level:	OFF
C&R corr:	0.132



3. Coordinates

Order:	ENZ
Label:	XYZ
AZ zero:	North



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4. PwrSave

Main Unit: OFF
EDM Unit: 0.5
Sleep: 5 min



5. Comm.

Ext. Comm: NIKON
Baud: 4800
Length: 8
Parity: NONE
Stop bit: 1



6. Stakeout

ADD PT: 1000



7. Unit

Angle: DEG
Distance: US-Ft
Temp: °F
Press: in. Hg



Sub-Menu for Distance

Distance: Decimal-Ft



8. Rec

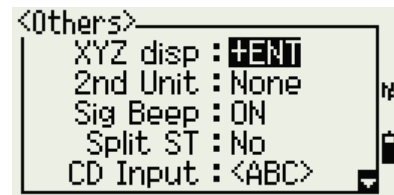
Store DB: RAW+XYZ



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9. Others

XYZ disp:	+ENT
2 nd unit:	None
Sig Beep:	ON
Split ST:	NO
CD input:	<ABC>



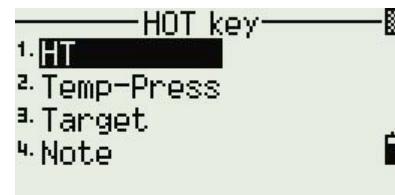
Variable Settings

There are several settings that will vary during the course of a Job. These can be set and reset through the **HOT**, **MSR1** and **MSR2** screens. The **HOT** screen is accessed by pressing the **HOT** key when the instrument screen is displaying the Basic Measurement Screen (BMS). The **MSR** menu screens are accessed by pressing the **MSR1** or **MSR2** keys for 1+ seconds, when the instrument is displaying the BMS screen.

Settings within the HOT Screen:

The HOT Screen is accessed by:

Pressing the **HOT** key.



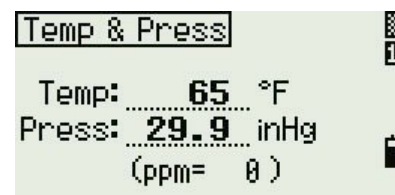
1. HT (Height of Target)

Input Height of Target
Enter Value (Example: **6.0** ft)
Press **ENT**



2. Temperature & Pressure

Input Temperature and Pressure
Enter Value (Example: **65** °F)
Press **ENT**



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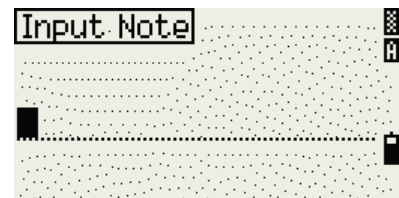
3. Target

Several combinations of target data can be stored and retrieved through this menu. Selecting from this menu changes the values in both MSR1 settings and the MSR2 settings and is not recommended

1. Prism	18	2.500
2. N-Pri	0	0.000
3. Prism	35	5.000
4. Prism	0	-
5. Prism	0	-
Edit		Set

4. Field Notes

You can enter additional information about a point. Example: "looks unstable". The note can be up to 50 characters long.



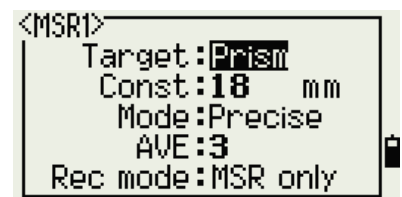
Settings within the MSR1 and MSR2 Menu Screens

The **MSR1** and **MSR2** Screens are accessed by:

Pressing the **MSR1** or **MSR2** keys down for 1+ seconds.

Target:

The NPL-352 can be set to measure using either the Infrared LED (Prism Mode) or the Pulse Laser Diode (Prism-less Mode). It is suggested that MSR1 be set to Prism and MSR2 be set to Prism-less.



Prism Constant:

The prism constant is a function of the prism construction. The mini-prism in the US&R cache has a prism constant of 18 mm. Sheet reflectors have a prism constant of 0 mm. Prism-less use has a prism constant of 0 mm.

